

NON-PUBLIC?: N
ACCESSION #: 8808150356
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Diablo Canyon Unit 1 PAGE: 1 of 5

DOCKET NUMBER: 05000275

TITLE: Reactor Trip From Overtemperature - Delta Temperature Protection
Logic Due To Personnel Error
EVENT DATE: 07/10/88 LER #: 88-020-00 REPORT DATE: 08/09/88

OPERATING MODE: 2 POWER LEVEL: 002

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR
SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Donald D. Malone, Regulatory Compliance Engineer
TELEPHONE #: 805-595-3751

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: On July 10, 1988, at 1544 PDT, a reactor trip was initiated from the two out of four coincidence logic for the over temperature delta temperature (OTDT) reactor protection system. The unit was stabilized in Mode 3 (Hot Standby) and the 4-hour nonemergency report required by 10 CFR 50.72(b)(2)(ii) was made at 1653 PDT.

The cause of the event was determined to be personnel error (cognitive) by an Instrumentation and Control (I&C) technician performing Surveillance Test Procedure I-2B, "Nuclear Power Range Channel Analog Channel Operational Test," who inadvertently adjusted Detector A test signal to greater than 50 percent instead of the procedurally required Detector B test signal.

To prevent recurrence the I&C technician involved has been counseled, and all I&C technicians will receive training regarding the requirements for self verification and procedure compliance. Additionally, plant operators will review the Operations Incident Summary and receive training regarding scaling considerations for the delta flux penalties for the OTDT protection channels.

(End of Abstract)

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I. Initial Conditions

Unit 1 was in Mode 2 (Startup) at approximately 1.4% power.

II. Description of Event

A. Event:

On July 10, 1988, at 1544 PDT, with Unit 1 in Mode 2, the Instrumentation and Control (I&C) technicians were recalibrating the nuclear instrumentation system (JC)(NIS), power range channels NI-41 to 44, high power trip setpoint from 25 to 85 percent, in accordance with Surveillance Test Procedure (STP) R-40, "Reload Power Ascension Testing." The recalibration of channel NI-42 had been successfully completed and the I&C technicians requested permission to perform STP I-2B, "Nuclear Power Range Channel Operational Test," for channel NI-41. The I&C technicians informed the licensed control operator that STP I-2B required concurrence from the control room operator prior to performance if any other coincident overtemperature delta temperature (OTDT) channel was in the trip condition (bistable TB 421C was in the trip state as required by Technical Specification (TS) 3.3.1 due to corrective maintenance on pressurizer pressure input to the OTDT from channel 456 of Protection Set 2). The control operator gave permission to proceed with the test based upon past experience with this test noting that the delta flux penalty resulting from STP I-2B would not be sufficient to activate the OTDT bistable at the current plant conditions.

While performing STP I-2B to verify operability of a bistable status lamp, the I&C technician inadvertently adjusted NI-41 Detector A test signal input greater than 50 percent rather than the procedurally specified NI-41 Detector B test signal, thereby causing a maximum delta flux penalty to be imposed on the channel. Bistable TB 411C setpoint was exceeded, causing TB 411C to trip. The two out of four coincident logic was satisfied resulting in a reactor trip.

B. Inoperable structures, components or systems that contributed to the event:

OTDT channel 421 was removed from service and bistable TB 421C was placed in the trip state as required by TS 3.3.1 due to corrective maintenance of pressurizer pressure channel 456.

C. Dates and approximate times for major occurrences:

1. On July 4, 1988, at 1130 PDT, Pressurizer pressure channel 456 was removed from service and OTDT channel 421C bistable was placed in the tripped condition as required by TS 3.3.1.

2. On July 10, 1988, at 1544 PDT, Event Date: Plant I&C technicians inadvertently adjusted Detector A test signal resulting in a reactor trip.

3. On July 10, 1988, at 1653 PDT, The unit was stabilized in Mode 3 (Hot Standby) and the 10 CFR 50.72(b)(2)(ii) 4-hour nonemergency report was made.

D. Other systems or secondary functions affected:

None

E. Method of discovery:

The event was immediately known to operations personnel due to alarms in the control room.

F. Operator actions:

Upon receipt of reactor trip alarms the plant operating personnel entered Emergency Operating Procedure (EP) E-0, "Reactor Trip or Safety Injection", EP E-0.1, "Reactor Trip Response," and stabilized the unit in Mode 3 at approximately 540 degrees reactor coolant temperature.

G. Safety system responses:

Reactor trip breakers opened and rods inserted into the core as designed.

III. Cause of Event:

A. Immediate cause:

The two out of four logic was satisfied due to bistable TB 421C

being previously placed in the trip condition to perform corrective maintenance and the OTDT bistable TB 411C trip setpoint was

exceeded.

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B. Root cause:

Personnel error (cognitive) by the plant I&C technician performing STP I-2B who inadvertently adjusted NI-41 Detector A test signal to greater than 50 percent (a maximum delta flux penalty) rather than the procedurally specified Detector B test signal (a lesser delta flux penalty) which resulted in the setpoint for bistable TB 411C being exceeded.

IV. Analysis of Event:

The reactor trip is a conservative action of the reactor protection system. Due to the low power level and reactor temperature at the time of the event, no thermal cycle to the unit resulted. Based upon the above considerations there were no adverse safety consequences or implications resulting from this event.

Had this event occurred at a higher power level, other than an additional thermal cycle there would have been no adverse safety consequences or implications resulting from this event.

V. Corrective Actions:

A. The individual technicians involved were counseled regarding the requirements for self verification and procedure compliance.

B. All I&C technicians will receive training to review Unit/Channel/Component Self Verification Policy (I&C Policy), procedure verbatim compliance requirements, and the Operations Incident Summary for this event.

C. Plant operators will review the Operations Incident Summary and receive training regarding scaling considerations for the delta flux penalties for the OTDT protection channels.

VI. Additional Information:

A. Failed components:

None

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B. Previous LERs on similar events:

There have been several DCPD LER's regarding personnel error (cognitive) while performing plant procedures, and the topic was specifically addressed in PG&E's letter (DCL-87-136) of June 15, 1987, which outlined administrative actions taken to control this problem. All LER's for the past year were reviewed and none of the identified root causes and corrective action would have prevented this event due to the specific equipment and unique testing required for the NIS channels.

ATTACHMENT # 1 TO ANO # 8808150356 PAGE: 1 of 1

Pacific Gas and Electric Company
77 Beale Street James D. Shiffer
San Francisco, CA 94106 Vice President
415/973-4684 Nuclear Power Generation
TWX 910-372-6587

August 9, 1988

PG&E Letter No. DCL-88-196

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Re: Docket No. 50-275, OL-DPR-80
Diablo Canyon Unit 1
Licensee Event Report 1-88-020-00
Reactor Trip from Overtemperature - Delta Temperature
Protection Logic Due to Personnel Error

Gentlemen:

Pursuant to 10 CFR 50.73(a)(2)(iv), PG&E is submitting the enclosed Licensee Event Report concerning a reactor trip initiated from overtemperature - delta temperature protection logic due to personnel error.

This event has in no way affected the public's health and safety.

Kindly acknowledge receipt of this material on the enclosed copy of this letter and return it in the enclosed addressed envelope.

Sincerely,
/s/ W. B. Kaefer/for
J. D. Shiffer

cc: J. B. Martin
M. M. Mendonca
P. P. Narbut
B. Norton
H. Rood
B. H. Vogler
CPUC
Diablo Distribution
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Enclosure
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